

Claims

1. Thermoplastic polymer blend comprising a bi-continuous phase structure of thermoplastic starch, at least one synthetic polymer, and a hydrolysis component on PVAc basis, wherein the starch component of the polymer blend has a molecular weight which is only minimally reduced relative to native starch.
2. Thermoplastic polymer blend according to claim 1, characterized in that it contains moreover extending agents, filling agents, internal lubricants, flow-improving agents, dyes, pigments, or mixtures thereof.
3. Thermoplastic polymer blend according to claim 1 or 2, characterized in that, relative to the total composition, it comprises 30-70 % by weight thermoplastic starch, 20-40 % by weight synthetic polymer, and 6-25 % by weight hydrolysis component on PVAc basis, and optionally an acidic catalyst component.
4. Thermoplastic polymer blend according to claim 1, wherein the synthetic polymer is a biologically degradable aliphatic polyester or their copolymers or polyvinyl acetate or their copolymers or a water-resistant starch derivative or cellulose derivative or polyvinyl alcohol or their copolymers or a water-resistant starch or cellulose derivative.
5. Method for producing a thermoplastic polymer blend by reactive extrusion of a mixture of native starch and at least one hydrophobic polymer with addition of a hydrolyzed component on polyvinyl acetate basis and of low polyfunctional alcohols or/and water, characterized in that the mixture is extruded in the presence of an acidic catalyst.
6. Method according to claim 5, characterized in that the acidic catalyst is an organometallic compound, such as dibutyl tin oxide, dibutyl tin dilaurate, tetra-2-

ethylhexyl titanate, triethanolamine zirkonate, titanate compound chelated with lactic acid, triethanolamine titanate or/and alkyl titanate.

7. Method according to claim 5, characterized in that the acidic catalyst is a Lewis acid (such as, for example, triphenyl phosphite).
- 5 8. Method according to claim 6 or 7, characterized in that the mixture comprises 0.5 % to 2 % of the acidic catalyst, relative to its total weight.
9. Method according to claim 5, characterized in that the acidic catalyst is an acid, such as nitric acid, sulfuric acid, hydrochloric acid or/and p-toluene sulfonic acid.
- 10 10. Method according to claim 9, characterized in that the mixture comprises 0.05 to 0.2 % of the acidic catalyst, relative to its total weight.
11. Method according to claim 5, characterized in that, for producing the hydrolyzed component, the polyvinyl acetate is saponified to a hydrolysis degree of 20 to 70 %.
- 15 12. Method according to claim 11, characterized in that the polyvinyl acetate is saponified to a hydrolysis degree of 30 % to 55 %.
13. Method according to claim 11, characterized in that an aqueous polyvinyl acetate dispersion is saponified at 120 - 140 °C with sodium hydroxide solution.
- 20 14. Method according to claim 11, characterized in that the hydrolyzed component on polyvinyl acetate basis is adjusted to a residual moisture contents of 15 - 35 %.

15. Method according to claim 5, characterized in that the native starch, the hydrolyzed component on polyvinyl acetate basis, and the catalyst are mixed to a well-flowing powder mixture.
- 5 16. Method according to claim 15, characterized in that approximately 1 % stearic acid, relative to its total weight, is added to the powder mixture.
17. Method according to claim 15, characterized in that approximately 1 % silica gel, relative to its total weight, is added to the powder mixture.
18. Method according to claim 11, characterized in that the catalyst is metered in a liquid state mixed with glycerin.
- 10 19. Use of a thermoplastic polymer blend according to one of the claims 1 to 18, respectively, for producing injection molded, deep-drawn, or blow-molded parts, foils or raw materials for fibers as well as material for melt film coatings.